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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO.       |
|--|-------------|----------------------|-------------------------|------------------------|
| 10/531,840   | 12/05/2005  | Christoph Porschmann | 0112740-1068            | 4335                   |
| 29177 7590 01/09/2008<br>BELL, BOYD & LLOYD, LLP<br>P.O. BOX 1135<br>CHICAGO, IL 60690 |             |                      | EXAMINER<br>LEE, PING   |                        |
|  |             |                      | ART UNIT<br>2615        | PAPER NUMBER           |
|  |             |                      | MAIL DATE<br>01/09/2008 | DELIVERY MODE<br>PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/531,840 | <b>Applicant(s)</b><br>PORSCHMANN, CHRISTOPH |  |
|                              | <b>Examiner</b><br>Ping Lee          | <b>Art Unit</b><br>2615                      |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/19/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "the mid-point" in line 3. There is insufficient antecedent basis for this limitation in the claim. For examination purpose, it is assumed that this point is the same "point in the center" as specified in claim 11.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagao et al (hereafter Nagao) (US006394898B1).

Regarding claims 10 and 15, Nagao discloses a method for simulating a movement in a predetermined direction relative to a reference point in the surroundings of an acoustic reproduction device, the method comprising the steps of:

- a) producing at least two virtual sound sources (hoofbeats from at least two horses) via the acoustic reproduction device (speakers as shown in Fig. 3), and

b) controlling the acoustic reproduction device using a control unit (32 as shown in Fig. 3), and wherein the control unit controls a direction of movement for the at least two virtual sound sources such that the direction of movement coincides with the direction of the movement to be simulated.

Nagao fails to explicitly show that the sources are arranged in succession with regard to time. However, Nagao's system could simulate this situation. When two horses are located with one behind another constantly (and may be in equal distance apart), their respective hoofbeats (the claimed virtual source) would be located in succession with regard to time. With the race continue for more than one loop, the first horse would reach the predetermined ending point (for example, speaker 12) and back again to the starting point (for example, speaker 1). Thus, it would have been obvious to modify the control unit in Nagao to simulate the two horses with one behind another constantly. The control unit would simulate the direction of movement in counter-clock wise coincides with the direction of the movement to be simulated (the hoofbeats). The horses are moved as function of time from one location to another. For example, horse 1 is moved at time  $t_0$  at starting point and moved to ending point at time  $t_{end}$ .

Regarding claim 11, Nagao's disclosure does not limitation the formation of the horse race. The first race could be started at SP1 and ended at SP5 and the second race could be started at SP1 and ended at SP5. The claimed starting point reads on the location of speaker 1, the ending point reads on the location of speaker 5, the center point reads on the location of speaker 3 and a reference point reads on the location

directly in front of speaker 3 to form a right angle between the line of speaker 1 and speaker 5 and the reference point.

Regarding claims 12 and 18, as discussed in col. 3 and 4 and illustrated in Figs. 3 and 4, there is an increase in the sound intensity from the starting point (speaker 1) to the mid-point (speaker 3), and a decrease in the sound intensity from the mid-point to the ending point (speaker 5) to simulate the movement from the speaker 1 to speaker 5 for the viewer located in front of speaker 3.

Regarding claims 13 and 17, with the two horse separated in constant distance, the speed of movement for the two virtual sound sources (hoofbeats) is inherently constant.

Regarding claim 14, Nagao teaches that at least two additional virtual sound sources could be produced (see Figs. 3 and 4).

Regarding claim 16, the control unit has a position detection device (col. 7, lines 57-59).

### ***Response to Arguments***

5. Applicant's arguments filed 10/16/07 have been fully considered but they are not persuasive.

Applicant argued that Nagao fails to teach or suggest the features of simulating a movement in a predetermined direction relative to a reference point in the surrounds of an acoustic reproduction device.

This is not convincing. Any simulation of the direction using sound reproduction is performed with respect to a reference point. For example, one can hear a car moving to the left, it is because sound produced by the car is moved to the left of the person. The reference point in Nagao is the simulated starting position.

Applicant argued that Nagao teaches away because Nagao fails to show the newly added limitation.

The newly added limitation "as a function of time" could be interpreted as the repeated movement of the two virtual sound sources as a function of time. This is clearly taught in Nagao. Horse 1 moves as a function of time and horse 2 also moves as a function of time. Nagao's disclosure also fit applicant's interpretation that the starting/ending points are determined as a function of time. Let's named  $t_0$  as the starting time of the race and  $t_{end}$  as the end of the race. At time  $t_0$ , the race starts at the starting point and at time  $t_{end}$ , the horse reaches the ending point. In order to simulating the horse location, the sound generated from the speaker is adjusted as a function of time, synchronizing to the location of the horse. As shown in Fig. 4, SP1 generates some sound, SP5 is completely silent. However, after certain time, SP5 will generate some sound and the sound from SP1 will be modified. Fig. 4 only shows the sound generation from each speaker at a moment.

Applicant argued that Nagao cannot replicate the sound of the horses and manipulate them as a function of time in the same manner.

This is not persuasive. Assuming the race of 3 lapses. As the lead horse (h1) pass ending point (e.g. speaker 12) at time  $t_{12}$  and back again to the starting point (e.g.

speaker 1) at time t13, and running toward the ending point (speaker 12) at t25, to the starting point (speaker 1) at t26 and finally ending point (speaker 12) at t38. All t12, t13, t25, t26 and t38 represent the time. The horse moves from one position to another position as a function of time.

Applicant argued the interpretation of claim 11.

Nagao teaches a sound simulation system. However, Nagao does not limit the format of the horse race has to be. If the race is starting from the SP1 and ended at SP5, then claimed limitation in claim 11 read on Nagao.

Applicant argued the interpretation of claim 12.

When the view is sitting at the middle point between SP1 and SP5, the sound simulated by Nagao will simulate the horse is moving closer to him/her by increasing the sound volume as the horse is moving closer and closer. After the horse is moved away, the volume is decreasing to simulate the horse is moving away from him/her.

### ***Information Disclosure Statement***

6. The information disclosure statement filed 12/19/07 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. An abstract is just a part of the document and does not represent an entire document. Applicant must submit the entire document.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

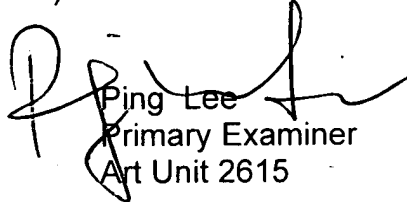
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Ping Lee  
Primary Examiner  
Art Unit 2615

pwl